

## NOTES

THE inaugural meeting of the Domestic Economy Congress was held at the rooms of the Society of Artists in Birmingham, on Tuesday last. In the absence of Lord Leigh the Mayor took the chair. Prof. Huxley gave a short address, in which he maintained that our so-called education does not fit a man for understanding his social duties. Public opinion was now beginning to take a different view of what education ought to be. Those who supported this Congress were among those who felt most strongly on the subject, and the influence on Government from discussions and meetings would be successful in the long run. The real business of the Congress commenced yesterday, when, amongst the papers read, were :—"Nursing," by Mrs. W. E. Gladstone ; "Infant Life," by the Countess of Ebersburg ; "Nursing in Connection with Education," by Miss Helen Taylor ; "Elementary Instruction to Children in Physiology," by Prof. Huxley ; and "Warming and Ventilation," by Capt. Galton. We give elsewhere an account of Prof. Huxley's paper, and we commend the latter part of it especially, not only to those who are interested in the teaching of physiology in schools, but to all who have given attention to that "burning question" of the day—vivisection.

THE annual session of the French Association for the Advancement of Science will take place at Havre on August 23 next, so that the members of the British Association will be able to take part in the proceedings, and a good attendance of these is anticipated. Members wishing to visit Havre are desired to write to the secretary of the French Association, 76, Rue de Rennes, Paris. Dr. Gilbert, local secretary in Havre, will engage rooms if required by previous notice. The president this year is Dr. Broca, Professor to the Faculty of Medicine, and Director of the Anthropological School of Paris. The maritime situation of Havre will supply every opportunity for a number of interesting excursions, especially for members of the British Association. The principal object of the deliberations of the society will be to determine how to secure a large and effective representation of science during the International Exhibition next year. A delegation of the French Society will be sent to the session of the British Association as was arranged last year.

ON Monday the 9th inst. the Haberdasher's Company voted 250 guineas as a donation to the building fund of the new City of London College. This institution is the outcome of the Metropolitan Evening Classes for young men, originally established at Crosby Hall, Bishopsgate Street, in 1848. Since that time it has pursued a most successful career, and now has more than 1,400 members.

THE Albert Medal of the Society of Arts has recently been presented to Sir George B. Airy, K.C.B., "for eminent services rendered to commerce by his researches in nautical astronomy and in magnetism, and by his improvements in the application of the mariner's compass to the navigation of iron ships."

WE understand that the International Meteorological Congress which was to have met at Rome in September, has been postponed to next year.

THE sad death of Dr. James Bryce furnishes another instance of the fact that though geology is in itself an invigorating pursuit it has its own share of risks. This long-known writer had left his home in Edinburgh on Tuesday morning the 10th inst. for a geological tour in the Western Highlands. He had reached as far as the Falls of Foyers on Loch Ness, whither he had undertaken to conduct a scientific excursion from Inverness a little later. On Wednesday, after leaving at the hotel a note addressed to his daughter announcing his safe arrival so far on his journey,

he strolled out hammer in hand to make some further observations among the granitic crags of that neighbourhood to which he had already given some attention. He was never seen again alive. A few hours afterwards his lifeless body was found on a slope of *dibris* at the foot of a shattered cliff of rock. His hammer lay a few yards higher up at the base of the crags. It is supposed that either from the concussion of his hammer or from some other cause a portion of the cliff had fallen away, crushing his temples, and killing him instantaneously. Dr. Bryce's early researches among the basalt of the north of Ireland, his work on Arran and Clydesdale, his papers on the Secondary rocks of the West Highlands, and his labours in connection with Scottish earthquakes have made his name familiar to geologists in this country. He was seventy-one years of age.

WE regret to announce the death, on the 15th instant, of another well-known geologist, Mr. John Williamson, of Scarborough, the discoverer of the celebrated Gresorthorpe plant-beds. His labours in bygone years, when field-workers like him were very scarce, will long be borne in remembrance. He was born in 1784, so that he was ninety-three years of age.

THE Portuguese African explorers, Major Serpa Pinto and Capt. Brito Capello, have returned to Lisbon after visiting Paris and London (whether they had gone to obtain some necessary articles), and are to start for Loanda in the Zaire. According to the *Diario de Notícias*, they have got together a magnificent outfit, and M. de Abbadié, the eminent French explorer, pronounced this expedition the best and most scientifically formed that had yet gone out to Africa. He has given them the remarkable universal theodolite with inverse action, of his own invention, which he has called the "Abbas," and with which he made geodetic measurements in Abyssinia ; which further he used in Algiers in observation of the transit of Venus. They also take a new apparatus invented by Father Perry for the study of terrestrial magnetism, one of the best equatorials of the Polytechnic School of Paris, a sextant of great delicacy, &c. M. Serpa Pinto has previously made extensive journeys in Africa, to Lake Nyassa and to near the Victoria Falls of the Zambesi.

WE note that a public meeting is to be held at the Mansion House to-day in aid of the "African Exploration Fund," recently commenced by the Council of the Royal Geographical Society to promote the continuous and systematic exploration of the interior of Africa.

AN engineer of St. Petersburg, M. de Kern, announces the discovery of a new metal, which he calls *Davyum*. It is found in the residues got from extraction of platinum. To isolate the element it is necessary, after having precipitated the ruthenium, to treat the mother-lye with nitrate of ammonia. A red precipitate is produced, which on calcination yields davyum. This metal is easily attackable by aqua regia, and much less by boiling sulphuric acid ; potash precipitates it in a yellow state, and sulphuretted hydrogen in a brown, passing into black through desiccation. With sulphocyanide of potassium the chloride of davyum gives a red coloration. From theoretical considerations developed by M. Mendeleeff, M. de Kern considers davyum to rank between molybdenum and ruthenium. On this supposition its equivalent should be near 100 ; and he proposes to test this experimentally.

M. V. OBERMAYER, of Vienna, has proved by experiments that the internal friction (viscosity) of hard black pitch is subject to the same laws as fluid friction. He determined the coefficients of internal friction by three different methods :—1. Pressure of cylindrical plates ; 2. Deformation of parallelepipedal plates ; 3. Distortion of cylindrical plates. No gliding of the black pitch occurs on the metal plates, between which the pitch plates are cast. For soft bodies, the internal friction appears not to follow exactly the laws of fluid friction.

ON July 13 the French Minister of Public Works visited the works of the 1878 Exhibition, which are in course of progression at the Champ de Mars. The number of workmen engaged in actual working was 1,137. Not less than 700 were employed at the Central Pavilion.

A SINGULAR accident has been recorded by the *Journal Officiel*. M. Gastard, of Paris, had placed a number of cartridges on a table. Some solar rays having been concentrated by an "eye" in the glass of a window, a terrific explosion took place. Similar catastrophes are more common than is generally supposed in summer, the windows of railway carriages, igniting sometimes overdriven plants, or even leaves fallen on railway embankments. It is known also that fires sometimes occur in Algerian forests through drops of water suspended to the leaves and forming lenses.

IT is now about a quarter of a century since the first submarine cable was laid, and the telegraph system may now be said to embrace all parts of the world, offering a certain completeness as an object of study. In an interesting *brochure* recently sent us, "Recherches sur la Loi du Mouvement Telegraphique International," M. Madsen sets the problem,—Is there a determinate relation between the international telegraphic movement and the commercial traffic, and what is the mathematical expression of this relation? He arrives, from a comparison of statistics, at a law which may be approximately expressed by the equation,

$$T = \frac{1}{d} [\sqrt{VN} + N_1 + N_2];$$

in which  $T$  denotes the number of telegrams between two countries,  $d$  the distance between their commercial "centres of gravity,"  $V$  the value (in pounds sterling) of their commerce with each other,  $N$  the tonnage of the ships sailing between them,  $N_1$  the tonnage of ships of the one country ( $L$ ), but sailing between the other  $L_1$  and other countries;  $N_2$  the tonnage of ships belonging to  $L_1$ , but sailing between  $L$  and other countries. The law has various applications, some of which M. Madsen points out.

AN ingenious new registering thermometer devised by M. Hervé Mangon, is described in *La Nature*. A long and fine capillary tube bent on itself and containing mercury, is supported in an iron frame; it passes through the stopper of a bell jar and terminates with a fine point in a mercury dish placed in one scale of a balance; the other scale contains a vessel of glycerine communicating by glass and india-rubber tubing with another glycerine vessel on the same level in an adjoining frame. When, on rise of temperature, mercury is forced out into the vessel, the balance is depressed on one side and an electric contact made, affecting an electro-magnet in the registering apparatus, which is composed of M. Redier's double wheel-work with differential train (which we must not stay to describe). When the depression referred to has occurred a suspended float in the second glycerine vessel descends, and raises the glycerine in the first, increasing the weight in that scale. The curve obtained (from a pencil on moving paper) is of zigzag form, the wheel-work being in constant motion, now to the right, now to the left.

M. BERTRAND having lately made an appeal to possessors of letters from Gauss, with a view to publishing the complete works of the eminent geometer, the grand-daughter of Laplace has responded with five interesting letters. One of them, written in 1807, presents Gauss at the outset of his career, deprived of his fortune and threatened with extreme measures if he did not pay 2,000 francs as a war contribution to the French army occupying Göttingen. In his distress he applies to Laplace, thinking his intervention might prove effectual. At the same time he describes the equally sad position of his colleague Harding. Laplace, unable to influence Napoleon, pays the 2,000 francs, and begs his friend not to disquiet himself further. Meanwhile Gauss obtains the sum from Olber, and now he is in a

position to succour Harding. Two years later he paid Laplace back the sum he had borrowed.

AN analysis has been lately made by Dr. Alder Wright (*Chemical News*) of two samples of wine, "ruby" and "white," from the Auldana vineyards, South Australia, with a view to determine the proportion of iron as a natural constituent. The average amount obtained by one method was, in both cases, 0.00130, by another method 0.00146, the iron being calculated as FeO (in the former case it is thought there may have been a little loss through incineration, &c.). Two circumstances are noted; first, that contact of the grape-juice with ironwork of any kind is studiously avoided in the manufacture; secondly, that the soil of the Auldana vineyard is exceptionally ferruginous, and as iron is taken up from the soil by vegetation, this seems a probable cause for the occurrence of iron in the finished wine. The identical character of the values, too (the wines being of different vintages) makes it improbable that the source of the iron is outside the grape-juice.

AN interesting experiment with regard to the speed of pigeon flight was made the other day. A carrier pigeon having been let off in Dover simultaneously with the starting of the express for London, reached the latter place twenty minutes in advance of the train. This corresponds to a distance-difference of eighteen miles.

WE observe that the recent enlightened decision by the Senate of London University with regard to admission of women to degrees in medicine meets with a good deal of hostile criticism from some of our leading medical contemporaries. We feel sure that no Trades' Union spirit will be allowed to prejudice what must generally be recognised as a step in the right direction.

AT a meeting of members of the Birmingham Natural History and Microscopical Society, held at the Midland Institute on July 13, a committee was appointed to make arrangements for another marine excursion, somewhat similar to the one made by this society in 1873 to Teignmouth, but this time it is to be to Arran and the Western Islands of Scotland. The dredging will be carried on in Lamlash and Brodick Bays. At the same time excursions will be made on land to Arran and the adjacent localities, all of which, we believe, yield a number of rare specimens, both botanical and geological; so that the members of each section no doubt will find this an enjoyable and an interesting excursion. It will take place in the first week in September.

A WONDERFUL white aquamarine has been found in Perthshire which, when cut, has produced one of the most brilliant gems ever seen. It is said by many competent judges to be equal to her Majesty's celebrated Koh-i-noor, its refraction being very great both by day and night. It is of a pure pellucid liquid white, and is known as the Scotch Koh-i-noor. Its hardness is 8.0, and specific gravity 2.76. Mr. Bryce M. Wright, F.R.G.S., is its possessor.

THE additions to the Zoological Society's Gardens during the past week include a Sambar Deer (*Cervus aristotelis*), a Spotted Porcine Deer (*Cervus minor*) from India, presented by H. R. H. the Prince of Wales, K.G.; a Slow Loris (*Nycticebus tardigradus*) from Malacca, a Prehensile-tailed Paradoxure (*Paradoxurus prehensilis*) from Burmah, presented by Mr. W. H. Richardson; a Leadbeater's Cockatoo (*Cacatua leadbeateri*) from Australia, presented by Mrs. Shand; a Red Howler (*Mycetes seniculus*) from New Granada, four Axis Deer (*Cervus axis*) from India, a Merian's Opossum (*Didelphys dorsigera*) from South America, deposited; two Striped Hyenas (*Hyena striata*), born in the Gardens, a Black-necked Swan (*Cygnus nigricollis*), hatched in the Gardens.